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NATAL GRASS (*Tricholaena rosea*).

INTRODUCTION.

Natal grass is a South African plant which has been known in Florida many years. In recent years it has become popular on the sandy soils of that State and to some extent along the Gulf coast westward into southern Texas. It is a perennial, but does not survive the winter where the temperature falls much below freezing. It is usually cultivated as an annual.

In the United States it is now cultivated more extensively in Florida than elsewhere. Farther west along the Gulf coast it succeeds well, but has not yet been extensively planted. It is well worth trying in southern Texas, Arizona, and California.

While it can be grown as a summer annual as far north as Washington, D. C., it is not likely to become of much importance as a field crop except in the extreme South.

DESCRIPTION.

When a single plant of Natal grass is allowed abundant room it will form a large tuft, sometimes 3 to 4 feet in diameter. The lower branches soon become decumbent, while the central stems are more nearly erect. The stems are slender, 3 to 4 feet high, and well covered with leaves, which are so nearly erect that few are lost in mowing the hay.

The seeds are produced in large clusters of about the size and shape of a panicle of oats. In most cases the seed clusters are bright red or rosy crimson in color, and for that reason the grass has sometimes been called "redtop." It is, however, very different from the common northern grass known as redtop. The name "Natal grass," which indicates the country of which it is a native, is more appropriate and distinctive and is the one now in most common use.

The plants are killed by a single plowing, and by keeping the land cultivated in other crops through the whole of a single season all the seeds in the ground will have germinated and the young plants will be killed by the cultivation, so Natal grass can not become a troublesome weed.

CULTURE.

Natal grass requires a long and warm season for its growth. Being a perennial, it grows continuously until checked by cold weather, so the longer the warm season the greater will be its period of growth. It is not injured by moderately cool weather, but its growth is always stopped by the first frost, and nearly all the plants are killed by even a slight freezing of the ground. Its cultivation is not recommended where heavy winter freezes occur or where even light freezes are frequent.

Natal grass makes its principal growth in middle and late summer, and most of that now cultivated in Florida is grown in rotation with some winter or early-spring crop.

Natal grass makes good grazing for cattle and horses during late summer and fall; but other pasturage is abundant at that time and can usually be had at less expense, and it gives little grazing in winter and early spring. It does not grow well on ground which has never been plowed, and so can not be recommended as a foundation for permanent pastures. It is not suited for use on a lawn, as it grows tall and does not make a turf.

Natal grass is like any other plant in that it makes its best growth on the richest soil. Fertilizers are seldom used directly on the grass. They are not needed for making a good crop on land which has been newly cleared, as such soil always produces a heavy yield. Older fields are usually well fertilized in the fall for the growing of some winter crop, and the residue of that fertilizer is sufficient to make a good growth of the grass during the following season. When any special fertilizer is used on the grass it should be largely nitrogenous, cotton-seed meal or nitrate of soda being the materials most commonly used.

The best soil for the grass is one which is sandy and well drained. Excellent crops of Natal grass have been grown on muck soils in various sections of Florida, but it is doubtful whether it will be as profitable there for either hay or grazing as are grasses which make a heavier growth, like Para grass and Rhodes grass. On wet soils Para grass and *Paspalum* are more satisfactory.

No special preparation of the ground is necessary before sowing the seed except that the surface should be made as fine, mellow, and even as possible. The field should be made so smooth that a mowing machine can be used without trouble. If the soil is heavy or cloddy, the harrowing will have to be much more thorough than where it is light and sandy. If the field has been used for some crop which was grown in rows, it should be disked and harrowed until no trace of the rows can be seen. All stumps should be removed, not only for the sake of securing additional ground on which the grass may grow, but also to avoid injuries to the mowing machine and other implements used in harvesting the crop.

In central and southern Florida seeding may be done at any time during the year, though spring is the favorite season and the only season in which it should be done farther north. The seed is always broadcasted, as it will not feed through a drill evenly. The seeds are very hairy and usually stick together in large bunches when dry, so it is well to dampen and roll them in soil or wood ashes before sowing. When treated in this way they remain separate and it is much easier to secure an even distribution over the ground. After sowing, a plank dragging or a rolling is all that is necessary to cover the seeds. Many planters think it better to leave the covering wholly to the rains. The seed should never be covered deeply, and therefore it is important that the surface of the ground be made fine and smooth before the seed is sown.

When the seed is of good quality and the sowing is done in early spring while the ground is still occupied with potatoes or some other winter crop and no hay crop is expected until late summer, the seeding may be very light, only 2 or 3 pounds per acre. If not done until later in the season it should be much heavier, 8 to 10 pounds per acre, so as to secure a full stand as soon as possible.

A common practice in growing Natal grass is to plow the ground after the last cutting has been made in the fall and then plant the land to oats or some winter truck crop. After the winter crop is removed in the spring the land is given a shallow plowing or disking and is harrowed until smooth. On fields treated in this way the first cutting for hay can be made in about two months after the spring disking and later cuttings from six to eight weeks apart.

SAVING HAY.

The mowing of Natal grass should begin as soon as a considerable part of the seed begins to ripen. If the weather should be unfavorable at that time, it can stand several days without great injury, as it is making a continuous growth of new shoots. When the cutting is delayed too long the quality of the hay is injured by the shattering of the seeds and by the drying up and breaking off of the older stems.

Good Natal grass hay is an excellent feed. The stems and leaves are not tough, are very palatable, and are eaten without waste. The stems are so slender that the hay makes an attractive looking bale and so sells well on the market. The commercial use of the hay has been developed in the past few years, and wherever offered it usually brings the same price as timothy. For many years timothy has been the standard of excellence for a market hay, and any hay which can compete with it successfully must have many desirable qualities. Natal hay is easily cured, is rich in protein, sells well on the market, is eaten well by stock, and therefore is able to compete with timothy in all regions where it can be grown.

The average yield of Natal grass hay is $2\frac{1}{2}$ to 3 tons per acre, or about three-fourths of a ton for each cutting. Double those quantities are sometimes secured where conditions are unusually favorable. When the ground is plowed in the fall and disked in the spring three mowings are usually secured, while if not plowed or disked four or five mowings are made, though the total yield in both cases is about the same.

When planted on a favorable soil Natal grass makes such a vigorous growth as to choke out most other grasses and weeds. Sand spurs, of several kinds, are frequently a great pest on sandy soils, though where abundant they are sometimes cut for hay, making a crop of light yield and inferior quality. Sand spurs almost wholly disappear when the land is seeded to Natal grass, so that many fruit growers and truckers claim it is worth more than it costs for that purpose alone. Sand spurs are specially troublesome in citrus groves, often being so abundant as to make work in them extremely disagreeable. The growing of Natal grass in the groves not only prevents the growth of the sand spurs, but it also gives two or three crops of excellent hay annually.

SAVING SEED.

Seed should never be gathered until the deep crimson color of the immature heads begins to fade to the paler red of those which are ripe and until the glossy appearance of the immature heads is obscured by the spreading hairs of those which are really ripe.

Where the grass has made a good growth the yield of seed is about 100 pounds per acre from the first growth, which can be stripped with little injury to the hay.

When immature seeds are gathered, they are full of moisture and heat very quickly unless spread out to dry. Even if mature seeds are gathered early in the morning, while still damp with dew, they will heat and soon be killed. The freshly gathered sacks of seed should be emptied at noon and at night, or whenever brought to the barn, and the seed spread on the floor so it will not be more than a foot deep.

Prompt and thorough drying is absolutely essential to preserve the seed in good condition. After it is emptied from the sacks it should be stirred frequently, at least twice daily, until it is well air-dried, after which it may be again put in sacks for storage.

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